

SOKOLOV, L. D.

Resistance to deformation in ferritic steels. Izv. vys. ucheb.  
zav.; chern. met. 7 no.6:88-91 '64. (MIRA 17:7)

L. Gor'kovskiy politekhnicheskiy institut.

S KUDNOV, V.A.; SOKOLOV, L.D.

Determining the true deformation in the neck of a specimen  
in tensile tests. Zav. lab. 30 no.9;1123-1126 '64.  
(MIRA 18;3)  
1. Gor'kovskiy politekhnicheskiy institut imeni Zhdanova.

SOKOLOV, Lev Dmitriyevich; GREBENIK, Viktor Mikhaylovich; TYL'KIN,  
Mikhail Arkad'yevich; Prinimal uchastiye BAKLUSHIN, I.L.;  
SMIRNOVA, V.V., kand. tekhn. nauk, dots., retsenzent;  
ROKOTYAN, Ye.S., doktor tekhn. nauk, prof., retsenzent;  
MOROZOV, B.A., doktor tekhn. nauk, retsenzent

[Study of the equipment of rolling mills] Issledovanie  
prokatnogo oborudovaniia. Moskva, Metallurgiia, 1964. 487 p.  
(MIRA 17:11)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche im. N.E.  
Baumana (for Smirnova).

L 36306-55 EWT(m)/EWA(a)/T/EWP(t)/EWP(k)/EWP(b)/EWA(c) Pf-4 JD,HW  
ACCESSION NR: AP4047335 S/0148/64/000/010/0059/0063 42  
41  
B

AUTHOR: Sokolov, L. D.

TITLE: Deformation resistance of austenitic steels

SOURCE: IVUZ. Chernaya metallurgiya, no. 10, 1964, 59-63

TOPIC TAGS: austenitic steel, transitional structure, stress relief, manganese-rich steel, plastic deformation, diffusion, crystal lattice, temperature effect

ABSTRACT: The author reviews the results of testing 28 different types of austenitic steels and steels with a transitional structure. All specimens were annealed for several hours at 8900 C. Appreciable stress relief set in in manganese-rich austenitic steel specimens after a 20% reduction within a 20 to 100C temperature range, coinciding with the findings of foreign authors. The rate at which martensite forms under the effect of plastic deformation is greatly affected by temperature. In comparison to earlier investigated steels, both austenitic steel and steel with a transitional structure display a higher value of coefficient m<sub>1</sub>.

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L 36306-63

ACCESSION NR: AP4047335

that expresses the characteristic of the temperature dependence of the velocity effect at similar temperatures. This is attributed to the low rate of diffusion in the crystal lattices and the effect of temperatures, particularly, within the high-temperature range at which intensive recrystallization takes place. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut (Gor'kiy Polytechnic Institute)

SUBMITTED: 10Sep63

ENCL: 01

SUB CODE: MM

NR REF SOV: 005

OTHER: 003

Card 2/3

L 36306-63

ACCESSION NR. AP4047335

ENCLOSURE: 01

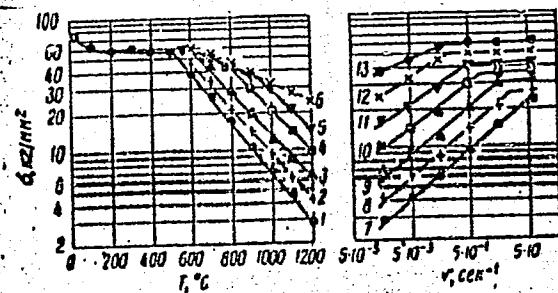


fig. 1

Temperature-Velocity Diagram of the Resistance of Kh18N9T Steel to Uniaxial Deformation. Rate of deformation, sec.<sup>-1</sup>: (1)  $5 \times 10^{-4}$ ; (2)  $5 \times 10^{-3}$ ; (3)  $5 \times 10^{-2}$ ; (4)  $5 \times 10^{-1}$ ; (5)  $5 \times 10^0$ ; (6)  $10^2$ . Deformation temperature: 0°C, (7) 1200; (8) 1100; (9) 1000; (10) 900; (11) 800; (12) 700; (13) 600.

Card 3/3

L 51498-65 EPR/EWP(k)/EWA(c)/EWT(m)/T/EWP(b)/EWA(d)/EWP(w)/EWP(t) Pf-4 EM/  
ACCESSION NR: AP5009268 JD/HW UR/0370/65/000/001/0124/0135 23

AUTHOR: Sokolov, L. D. (Gor'kiy)

TITLE: The high temperature-strain rate dependence of resistance to deformation  
in steels 18

SOURCE: AN SSSR. Izvestiya. Metally, no. 1, 1965, 124-135

TOPIC TAGS: steel deformation resistance, deformation temperature dependence,  
strain rate steel carbon content, alloying admixture, true stress, high tempera-  
ture strain

ABSTRACT: Temperature-strain rate dependencies of actual stress were obtained  
for more than 150 grades of steel by compression testing at 800 - 1200°C (100°C  
intervals) and  $5 \cdot 10^{-4}$  to  $10^2$  sec<sup>-1</sup>. The author presents several generalized  
conclusions on the basis of the plotted results: 1) the rate  $v_1$  (characterising  
the transition from pre- to postrecrystallization regions on  $\sigma(v)$  diagrams) in-  
creases at identical (but not identical homologous) temperatures with an in-  
crease in C; 2) the rate  $v_1$  increases with temperature for all steels; 3) alloy-  
ing admixtures of 2 - 3% or less hardly effect  $v_1$  (Si and Al are exceptions);  
4) noticeable depression of  $v_1$  is observed in carbide and austenitic steels.

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ACCESSION NR: AP5009268

5) the curve angle coefficient  $n_1$  increases with temperature and content of C, its values are lower for austenitic and carbide steels than for ferritic steels (related to recrystallization); 6) the factor  $n_1$  is more stable than the rate  $v_1$  in all cases; 7) the effect of composition and structural peculiarities on the strain-rate dependence of resistance to deformation attenuates with an increase in temperature (except in ferritic steels with high Cr content); 8) the rate  $v_1$  at a given deformation level depends on the homologous temperature. True stress values were calculated (20% relative deformation, strain rate  $5 \cdot 10^{-4} \text{ sec}^{-1}$ ) and are presented in tabular form for 86 steels at 600 - 1200°C. Finally, the author comments on the applicability of his approach to other types of deformations, defines the temperature and strain-rate ranges within which the obtained dependencies are applicable, and clarifies the physical meaning of the rate  $v_1$ . Orig. art. has: 4 tables, 5 figures and 7 formulas.

ASSOCIATION: None

SUBMITTED: 19Dec63

NO REF SOV: 012

ENCL: 00 SUB CODE: MM

OTHER: 006

Card 2/2 mc

SKUDNOV, V.A. (Gor'kiy); SOKOLOV, I.D. (Gor'kiy)

Plasticity criteria for metalworking by pressure. Izv. AN SSSR. Met.  
no.4:117-125 Jl-Ag '65. (MIRA :8:8)

L 45221-65 EWT(m)/EWP(b)/EWP(t) IJP(c) JD  
ACCESSION NR: AP5010984

UR/0148/65/000/004/0091/0995

10

B

AUTHOR: Sokolov, L. D.

TITLE: Deformation strength of carbide-rich steels and comparative data for other types of steel

SOURCE: IVUZ. Chernaya metallurgiya, no. 4, 1965, 91-95

TOPIC TAGS: carbides, steel testing

ABSTRACT: Cylindrical samples from 11 grades of annealed steel were subjected to compression at different temperatures and rates of deformation. The test setup and results obtained are described in earlier papers. Here, actual stresses in conjunction with a reduction in area of 20% are shown as a function of temperature and strain rate. Four parameters of the temperature-strain rate dependence are also discussed. It was also found that there is no strain hardening in carbide-rich steels and that the rate factor is the dominant determining factor in the temperature-rate dependence of deformation resistance in the various steels. It was shown that the effect of composition and structural characteristics on the temperature-rate dependence of deformation resistance is weaker the higher the temperature

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L 45221-65  
ACCESSION NR: AP5010984

with the exception of high chromium ferritic steels in which recrystallization is not impeded by the action of hardening components and consequently proceeds more vigorously than in the other steels. Orig. art. has: 2 figures, 3 tables.

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut (Gorkiy Polytechnical Institute)

SUBMITTED: 14Mar62

ENCL: 00

SUB CODE: MM

NO REF SOV: 008

OTHER: 000

B:SB  
Card 2/2

L 01796-66 EWT(m)/EWP(w)/EWA(d)/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) MJW/JD/HW

ACCESSION NR: AP5021498

UR/0370/65/000/004/0117/0125

669.539.3

44  
40  
B

AUTHOR: Skudnov, V. A. (Gor'kiy); Sokolov, L. D. (Gor'kiy)

44.55 44.55

TITLE: Ductility in pressure working of metals

16

SOURCE: AN SSSR. Izvestiya. Metally, no. 4, 1965, 117-125

TOPIC TAGS: metalworking, plastic deformation, ductility

44.55 16

ABSTRACT: The deformability of a number of materials was studied, using tensile tests, open swaging, deformation in punches, rolling and stamping. The purpose of the work was to determine the effect of the stressed state on maximum ductility. The average specific pressures for any of these methods of deformation are calculated from the formula  $p_{av} = P/F$ , where  $P$  is the force on the metal in the direction of tool travel along the main axis of deformation at the moment of destruction,  $F$  is area of contact between metal and tool, perpendicular to the direction of tool travel. The results are tabulated and graphed. A linear relationship was found between the maximum ductility expressed in the form of logarithmic deformation  $e = \log h_0/h_1$  and the stressed state  $n = p_{av}/\sigma_i$  where  $\sigma_i$  is the true resistance to

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L 01796-66

ACCESSION NR: AP5021498

deformation. The slopes of the lines vary for the various materials tested, which indicates that the effect of the stressed state on ductility varies. The authors introduce the ductility criterion for metals  $\pi = \frac{e_2 - e_1}{n_2 - 1}$  as an index of this effect,

where  $e_1$  is the maximum ductility for  $n=1$  (i.e. under tension) and  $e_2$  is maximum ductility under any other stressed state conditions for  $n_2 > 1$ . The relationship between the ductility and stressed state is closer for magnesium and Dural AV than it is for Dural DL and MATS9-2 bronze. This shows that this relationship becomes weaker as the ductility of the metal increases. Graphs are given for  $\pi(\psi)$ . It is shown that this function may be used for calculating maximum degrees of deformation in various pressure processes of metalworking for practically any temperature and speed conditions. Orig. art. has: 4 figures, 4 tables.

ASSOCIATION: none

SUBMITTED: 02Apr64

ENCL: 00

SUB CODE: MM, AS

NO REF SOV: 005

OTHER: 000

Card 2/2

ISHUTKIN, S.I.; SOKOLOV, L.D.

Horizontal impact machine with rubber block accelerator.  
Zav. lab. 31 no. 3:379-380 '65. (MIRA 18:12)

1. Gor'kovskiy politekhnicheskiy institut im. A.A.Zhdanova.

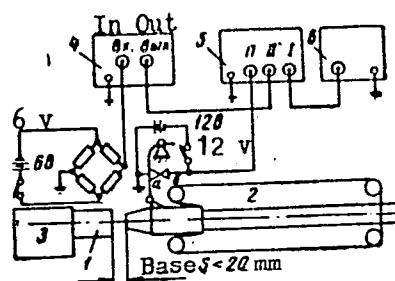
L 34856-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) JD

ACC NR: AP6010058

SOURCE CODE: UR/0032/66/032/003/0363/0364

67

B

AUTHOR: Ishutkin, S. I.; Sokolov, L. D.ORG: Gor'kiy Polytechnic Institute im. A. A. Zhdanov (Gor'kovskiy  
politekhnicheskly Institut)TITLE: Measuring the initial velocity of an impactSOURCE: Zavodskaya laboratoriya, v. 32, no. 3,  
1966, 363-164TOPIC TAGS: material deformation, plasticity,  
velocity measuring instrumentABSTRACT: The development of a new device for  
measuring initial velocity of a material-deforming  
tool is reported. The device is intended for  
studying time characteristics of strain resistance  
and plasticity of metals under dynamic conditions.  
The speed way measured by a dynamometric device  
(see figure) was used by the authors in conjunction  
with a horizontal impact-testing machine which had

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UDC: 620.178.35

L 34856-66

ACC NR: AP6010058

a rubber striking-tip accelerator. The same device is applicable to any other design of the testing machine. The measuring circuit has two independent parts, one transmitting an amplified signal from the tensometric bridge to the second beam of the oscilloscope and the other turning on the sweep for  $3 \times 10^{-8}$  to  $2 \times 10^{-8}$  sec. Orig. art. has: 2 figures.

SUB CODE: 09, 11 / SUBM DATE: none / ORIG REF: 003

Card 2/2 ✓

MAKSIMADZHI, A.I., kandidat tekhnicheskikh nauk; NOVIKOV, O.A., inzhener;  
SOKOLOV, L.G., inzhener.

Technical and economic effectiveness in the use of low-alloy  
steels for the construction of dry cargo freighters. Sudostroenie 22 no.10:27-30 0 '56. (MLRA 10:2)

(Ships, Iron and steel)  
(Freighters)

MIROSHNICHENKO, I.P., kand.tekhn.nauk; SOKOLOV, L.G., inzh.

Construction of modern, large-tonnage loose-bulk cargo vessels in  
foreign countries. Sudostroenie 23 no.12:56-60 D '57. (MIRA 11:2)  
(Merchant ships) (Shipbuilding)

MAKSIMADZHI, A., starshiy nauchnyy sotrudnik; NOVIKOV, O., mladshiy nauchnyy sotrudnik; SOKOLOV, L., mladshiy nauchnyy sotrudnik

Additional allowances for wear and corrosion in designing low-alloy steel hulls for transport ships. Mor.flot 19 no.3:12-16 Mr '59.  
(MIRA 12:4)

1. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota.  
(Hulls (Naval architecture))

SOKOLOV, L.G., inzh.

Determining the loading capacity of perishable cargo carriers.  
Sudostroenie no.7:6-9 J1 '60. (MIRA 13:?)  
(Ships--Cargo)

SOKOLOV, Lev, Gennadiyavich; KARAMZIN, Ye.M., red.; KRUGLOVA, Ye.M.,  
red. izd-va; LAVRENOVA, N.B., tekhn. red.

[Regular steamship lines of the U.S.S.R. and people's democracies] Morskie reguliarnye linii SSSR i stran narodnoi demokrati. Moskva, Izd-vo "Morskoi transport," 1961. 30 p.  
(MIRA 14:5)

(Europe, Eastern--Steamboat lines)

SOKOLOV, L.G.

Using differential methods in determining the tonnage and basic  
elements of a dry cargo ship. Trudy TSNIIMF 7 no.36:69-76 '61.  
(MIRA 15:3)  
(Freighters)

SOKOLOV, L.G.

Determination of the cargo capacity and trim of a seagoing dry cargo ship according to tonnage diagrams. Trudy TSNIIMF 7 no. 36:77-88 :61.  
(MIRA 15:3)

(Freighters)

MICROZOV M., starshiy prepodavatel': SOKOLOV, L., starshiy prepodavatel'

The technology of shipbuilding should be tied in with the  
technology of ship repairs. Mor. flot 21 no. 6:25-26 Je '61.  
(MIRA 14:6)

1. Vyssheye voyenno-inzhenernoye morskoye uchilishche.  
(Shipbuilding) (Ships--Maintenance and repair)

SOKOLOV, L.G.; AZIZOV, M.M.; ZHURAVLEVA, L.S.; DMITRIYEV, A.A.

Investigating the architectural design type of a general purpose dry-cargo ship of 3000-4000-ton deadweight capacity.  
Trudy TSNIIMF no.45:3-26 '63. (MIRA 16:9)

SOKOLOV, L.G., inzh.

Relation between capacity, stability, and the amount of water ballast in the transportation of deck-loaded lumber. Sudostroenie 29 no.11:10-12 N '63. (MIRA 16:12)

L 42277-65 EPR/EWP(k)/EWP(z)/EWT(d)/EWT(m)/EWP(h)/EWP(b)/T/EWA(d)/EWP(1)/EWP(w)/  
EWP(v)/EWP(t) Pf-4 MJW/JD  
AM5009838 BOOK EXPLOITATION S/ 44  
33  
B+1

Makimadzhi, Aleksandr Isaakovich; Novikov, Oleg Aleksandrovich; Sokolov, Lev  
Georgiyevich

Low-alloy steel in shipbuilding (Nizkolegirovannaya stal' v sudostroyenii) Lenin-  
grad, Izd-vo "Sudostroyeniye", 1964. 299 p. illus., bibli., tables. 1900  
copies printed. Reviewers: Candidate of Technical Sciences Ya. I. Korotkin,  
Engineer G. S. Chuvikovskiy; Editor: E. I. Lisok; Technical editor: Yu. N.  
Korovenko; Proofreaders: A. F. Andrianova, M. P. Eusheva

TOPIC TAGS: fatigue life, high strength steel, low alloy steel, ship hull

PURPOSE AND COVERAGE: This book was intended for staff members at scientific-research organizations and design bureaus within the shipbuilding industry; it may be useful also to students at shipbuilding vuzes and faculties. The technical and economic feasibility of using steels with elevated strength in marine shipbuilding is investigated, particularly factors affecting the utilization of these steels, questions of setting standards for the strength and durability of hull constructions, and rational limits on the application of steels as a function

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AM5009838

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of their strength characteristics. Great attention is directed to the weight variation of the hull and of the individual hull elements with the application of steels with different mechanical properties, and to the establishment of a methodology for evaluating the economic feasibility of using high-strength steels for the hulls of transports. The authors have incorporated the results of their research in the period from 1956 to 1963 at the TSNIIMF under the direction of A. I. Maksimadzhii, and express their gratitude to their colleagues at TSNIIMF I. Ya. Barsik, O. A. Berezhnykh, G. V. Markozov, V. M. Molchanov, I. T. Chevazhevskaya, and A. M. Shipkovaya. Others whose assistance is acknowledged gratefully are Ya. I. Korotkin, G. S. Chuvikovskiy, and G. V. Poytsov.

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Ch. 3. Setting standards for the strength of the hulls of transports -- 47

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AM5009838

- Ch. 4. Setting standards for the fatigue durability of ship hulls -- 101  
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Ch. 7. Methodology of determining the economic feasibility of applying steels of elevated strength -- 227  
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SUB CODE: ME, MM SUBMITTED: 25Jul64 NR REF Sov.064

OTHEE:034

CC  
Card 3/3

TSITSIASHVILI, Mikhail Yur'yevich; PAVLOV, Vladimir Semenovich;  
SOKOLOV, L.G., red.; LAPINA, Z.D., red. izd-va; LAVRENOVA,  
N.B., tekhn. red.

[Modern methods for the loading and unloading of unrefined  
sugar in harbors] Sovremennye sposoby peregruzki sakhara-syrtsa  
v portakh. Moskva, Izd-vo "Morskoi transport," 1962. 89 p.  
(MIRA 16:2)

(Sugar--Transportation) (Cargo handling)

SOKOLOV, L. I.

11-pmt

Ionization spectra for the soft component of cosmic radiation at sea level. A. G. Meshkovskii and L. I. Sokolov.  
Soviet Phys. JETP 3, 683-91(1956)(English translation).  
See C.A. 51, 102f.

2

pmt  
(all)  
info

*Sokolov, L.I.*  
Category : USSR/Nuclear Physics - Cosmic rays

C-7

Abs Jour : Ref Zhur - Fizika, No 1, 1957, No 645

Author : Meshkovskiy, A.G., Sokolov, L.I.  
Title : Spectra of Ionization of Soft Component of Cosmic Radiation at Sea Level

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 5, 840-849

Abstract : A new procedure was developed for the investigation of spectra of ionization of cosmic-ray particles. Particle spectra were plotted at intervals of 2 -- 3, 3 -- 5, 5 -- 9, and 9 -- 15 cm of lead. Conclusions are drawn concerning the makeup of the proton component at sea level in these range intervals.

Card : 1/1

Sokolov, L. I.

4-RMF

1537.591.8  
L4520. INVESTIGATION OF THE IONIZATION SPECTRA OF  
COSMIC-RAY PARTICLES AT AN ALTITUDE OF 3250 m ABOVE  
SEA-LEVEL. A.G. Meshkovskii and L.I. Sokolov.

Zh. Eksp. teor. fiz., Vol. 31, No. 5(1956), p. 5 (1956). In Russian.  
The technique described in an earlier paper (Abstr. 8268/1956)  
was employed to investigate the ionization spectrum in various par-  
ticle ranges of the hard and soft cosmic-ray components at an alti-  
tude of 3250 m above sea-level. The proton spectrum in the  
0.36-1.0 BeV/c interval has been obtained.

A.

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Sokolov L.I.

Distr: 4E3d

2992

THE IONIZATION SPECTRUM OF COSMIC RAYS 3250 m  
ABOVE SEA LEVEL. A.G. Meshkovskii and L.I. Sokolov,  
Soviet Phys. JETP 4, 629-32(1957) June.

Using a previously described method, the ionization  
spectra produced by the soft and hard components of cos-  
mic rays of various ranges at 3250 m above sea level were  
measured. The proton momentum spectrum was obtained  
in the interval 0.36 to 1.0 bev/c. (auth)

4  
IRML

SOKOLOV, L. I.

56-2-39/47

AUTHOR  
TITLE

MESHKOVSKIY, A.G., SOKOLOV, L.I.  
 On the Proton Component of Cosmic Radiation at Sea Level  
 (O protonnoy komponente kosmicheskogo izlucheniya na urovne moreya.  
 Russian)

PERIODICAL

Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol 33, Nr 2 (8), pp 542 -  
 - 544 (U.S.S.R.)

ABSTRACT

The proton component in the low-energy part of cosmic radiation was  
 measured at sea level in the course of 2458 hours by an earlier  
 described method (Zhurnal Eksperim. i Teoret. Fiziki, 1956, Vol 30,  
 p 840). Result:

1.) Range of impulses in BeV/C	0,31-0,38	0,38-0,44	0,44-0,48	0,48-0,55
intensity in $\text{cm}^{-2}\text{sec}^{-1}\text{steradian}^{-1}$ $(\text{MeV/e})^{-1} \cdot 10^{-8}$	11,5±1,6	14,5±1,8	17,8±1,6	18,4±1,5

- 2.) The integral intensity of the vertical proton current within the  
 range 0,37 - 1,04 BeV/C at sea level amounts to  $(1,12 \pm 0,03) \cdot 10^{-4} \text{ cm}^{-2} \text{ sec}^{-1} \text{ steradian}^{-1}$ . From the known value for 3250 m  
 height above sea level and the value for 0 m the average absorp-

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56-2459/47

On the Proton Component of Cosmic Radiation at Sea Level  
tion length can be determined as  $L = 143,5 \pm 6,1 \text{ g/cm}^3$ .  
3.) The total intensity of the vertical proton current at the sea  
level was determined as  $(1,88 \pm 0,05) \cdot 10^{-4} \text{ cm}^{-2} \text{ sec}^{-1}$  steradian.  
(With 1 table, 1 illustration, 7 Slavic references).

ASSOCIATION                                 Not given  
PRESENTED BY  
SUBMITTED                                     21.5.1957  
AVAILABLE                                     Library of Congress

Card 2/2

L 3775-66 EWT(m)/EPA(w)-2/EWA(m)-2  
ACCESSION NR: AT5007948

IJP(c) GS

S/0000/64/000/000/0705/0710

AUTHOR: Gol'din, L. L.; Goryachev, Yu. M.; Kuryshev, V. S.; Sokolov, L. I.

TITLE: Output of particles from the proton synchrotron <sup>19</sup> at the Institute of Theoretical and Experimental Physics (ITEP) and survey of the main beams

SOURCE: International Conference on High Energy Accelerators. Dubna, 1963.  
Trudy. Moscow, Atomizdat, 1964, 705-710

TOPIC TAGS: synchrotron, proton beam, magnetic field

ABSTRACT: The design of the magnetic system (Monosyon, N. A.; Strel'tsov, N. S.; Ostrovskiy, N. A., *Pribory i tekhnika eksperimenta* (Experimental Instruments and Techniques), No 4, 10, 1962) of the proton synchrotron at the ITEP (Vladimirskiy, V. V.; Komar, Ye. G.; Mints, A. L.; Gol'din, L. L.; et al., *ibid*), possesses peculiarities which lead to certain difficulties in the output of the beams. The accelerator has no linear intervals, and also no portions where the yokes of neighboring magnetic blocks amounts in all to about 30 cm. In addition, there are neutral poles in the turning blocks. On one side of the vacuum chamber is the neutral pole, and on the other side, in the narrow part of the interpolar gap, is a region of large inhomogeneous magnetic field. The report discusses the methods of parti-

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ACCESSION NR: AT5007948

cle extraction on the ITEP's accelerator. The extraction of particles through the narrow part of the interpolar gap is connected with a substantial analysis of charged particles in the magnetic field of the block (Malyshev, I. F.; Popkovich, A. V.; Borisov, V. S.; Goryachev, Yu. M.; et al., *ibid.*), requiring computation of the trajectories of the particles on an electronic computer. The most interesting method of extraction is that in which the particles fly out from the target at an angle of  $10-13^\circ$  to the direction of the primary protons, which pass through an aperture drilled obliquely in the neutral pole of the S-block (proposed by Yu. V. Trebukovskiy). The most important advantage of this method is the absence of a magnetic field in such a small path that they experience hardly any deflection there. During input into the neutral pole, the particles are incident into a region where the magnetic field is practically absent. Therefore, the output of particles through the neutral pole is equally good for both negative and positive particles. It is also convenient to extract the neutral particles through the aperture in the neutral pole. Thus the beams of particles extracted by this method are universal. The report also discusses the arrangement of the beams of secondary particles and of the experimental installation by the accelerator. There are at present nine beams which are extracted from six internal targets arranged between certain blocks. These beams are discussed in detail. At the present time the accelerator has no arrangement for the direct extraction of the primary beam. The scattering

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ACCESSION NR: AT5007948

3

of protons and the generation of the secondary particles are realized with the aid of internal targets, which are divided into two types: fast and slow. The fast targets are intended for work with electronics. A universal driven mechanism ensures the operation of both the fast and the slow targets. It consists of two identical parts which can be employed independently. The report discusses the simultaneous operation of several targets. To enhance the effectiveness of accelerator operation, methods were developed for the division of the intensity of the primary beam among several targets during the course of one acceleration cycle. In all cases the targets are introduced in succession one after the other. The fast targets, by intercepting the beam, remove a small part of the intensity. The remaining intensity is used against a slow target. Control over the distribution of the intensity of the primary beam among the targets is realized by means of an oscillograph (Kuz'min, A. A., *ibid.*). "The authors wish to thank G. F. Onlov and Yu. A. Bol'shakov for their active participation in the work on the installation of the magnets and lenses; Yu. S. Krestnikov for his valued advice; and also other associates for their service in controlling the synchrotron." Orig. art. has: 6 figures, 2 tables.

ASSOCIATION: Institut teoreticheskoy i eksperimental'noy fiziki GKAE SSSR  
(Institute of Theoretical and Experimental Physics, GKAE SSSR)

SUBMITTED: 26 May 64

ENCL: 00  
NO REF SOV: 007SUB CODE: NP  
OTHER: 000O/C  
Card 3/3

MOROZOV, M., inzhener, SOKOLOV, L., inzhener

Fire tube boiler repair practices. Mor.flot 15 no.5:22-24  
My '55. (MLR 8:6)  
(Boilers, Marine)

MOROZOV, Mikhail Yakovlevich; SOKOLOV, Leonid Ivanovich; TESHCHUK, A.Ye.,  
redaktor; MELEYEV, A.S., redaktor Izdatel'stva; TIKHONOVA, Ye.▲.,  
tekhnicheskiy redaktor

[Repair of ship equipment] Remont sudovykh ustroistv. Moskva, Izd-vo  
"Morskoy transport," 1957. 211 p. (MLRA 10:9)  
(Ships--Maintenance and repair)

SOKOLOV, L.I., inzh.

Organizing roller washing operations in the maintenance  
of conveyer systems. Rech. transp. 17 no.3:35 Mr '58.

(MIRA 11:4)

(Conveying machinery--Maintenance and repair)

MOROZOV, Mikhail Yakovlevich; SOKOLOV, Leonid Ivanovich; REUT, N.I.,  
red.; KHOPOVA, L.K., tekhn. red.

[Analysis of damage to marine engine crankshafts and methods  
to correct them] Analiz povrezhdenii kolenchatykh valov sudo-  
vykh dvigatelei i metody ikh ispravlenii. Moskva, Izd-vo  
"Morskoi transport," 1962. 68 p. (MIRA 15:7)  
(Marine engines) (Crankshafts)

SOKOLOV, L., mladshiy nauchnyy sotrudnik

Evaluating the power plant capacity of seagoing dry cargo freighters.  
Mor. flot 22 no.2:28-30 F '62. (MIRA 15:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut morskogo  
flota. ~~TSentral'nyy nauchno-issledovatel'skiy institut morskogo flota~~  
(Freighters) (Marine engines)

SOKOLOV, L.I.

Effect of some predatory fishes on the commercial ichthyofauna  
of the middle course of the Amur River. Nauch.dokl.vys.shkoly;  
biol.nauki no.4:38-40 '62. (MIRA 15:10)

1. Rekomendovana kafedroy ikhtiologii Moskovskogo gosudarstvennogo  
universiteta im. M.V.Lomonosova.  
(AMUR RIVER--FISHES)

SOKOLOV, L.I.

Feeding habits of the Chinese perch in the middle Amur River.  
Vest. Mosk. un. Ser. 6: Biol., pochv. 17 no.1:13-17 Ja-F '62.  
(MIRA 15:1)

1. Kafedra ikhtiologii Moskovskogo universiteta.  
(Amur River—Perch)

SOKOLOV, L.I.

Summer food of pike in the middle course of the Amur River.  
Vest. Mosk. un. Ser. 6: Biol., pochv. 17 no.3:44-48 My-Je '62.  
(MIRA 15:6)

1. Kafedra ikhtiologii Moskovskogo universiteta.  
(AMUR RIVER--PIKE)  
(FISHES--FOOD)

SOKOLOV, L.I.

Population fecundity of the Siberian Sturgeon *Acipenser baeri*  
Brandt in the Lena River. Nauch. dokl. vys. shkoly; biol. nauki  
no.3:23-25 '64 (MIRA 17:8)

1. Rekomendovana kafedroy ikhtiologii Moskovskogo gosudarstven-  
nogo universiteta.

SOKOLOV, L.I.; NOVIKOV, A.S.

Materials on the biology of the Siberian sturgeon *Acipenser baeri*  
Brandt in the bodies of water of Yakutia. Nauch.dokl.vys.shkoly;  
biol.nauki no.4:36-38 '65. (MIRA 18:10)

I. Rekomendovana kafedrey ikhtiolodii Moskovskogo gosudarstvennogo  
universiteta im. M.V.Lomonosova.

SOKOLOV, L.I.

Growth of the Siberian sturgeon *Acipenser baeri* Prandt in  
the Lena River. Vest. Mosk. un. Ser. 6: Biol., pochv. 20  
no.1:3-12 Ja-F '65. (MIRA 18:3)

1. Kafedra ikhtiologii Moskovskogo universiteta.

SOKOLOV, L.I.; KASHIN, S.M.

Comparative analysis of some morphological and biological indices in  
the population of the Siberian sturgeon Acipenser baeri Brandt in  
various bodies of water. Vest. Mosk. un. Ser. 6: Biol., pochv. 20  
no.3:13-18 My-Je '65. (MIRA 18:7)

1. Kafedra ikhtiologii Moskovskogo universiteta.

KOREN', L.I.; SOKOLOV, L.I.; MARACH, R.V.

Glazes based on local boron-silicate ores. Stek.i ker. 18  
no.8:35-36 Ag '61. (MIRA 14:8)  
(Glazes)

SOKOLOV, L.K., arkitektor; EYSMAN, G.Ya., inzh.

Standard units for workers' service buildings. Prom.stroi. 37  
no.10:13-18 O '59. (MIRA 13:2)

1. Gosudarstvennyy institut tipovogo proyektirovaniya i tekhnicheskikh issledovaniy (for Eysman).  
(Factories--Design and construction)

SOKOLOV, L.K.

Tumorlike gastritis; a survey of literature. Sov. med. 27 no.11:81-88  
N '64. (MIRA 18:7)

1. Gastroenterologicheskaya laboratoriya (rukoveditel' - deystvi'tel'nyy  
chlen AMN SSSR prof. V.Kh. Vasilenko) AMN SSSR, Moskva.

SOKOLOV, L.M., teplotekhnika

Means for improving accuracy in measuring the creep of steam-pipes. Energetik 13 no. 12:15-16 D '65 (MFA 19:1)

L 26332-65 ENT(d)/ENT(1)/EEC(k)-2/EEC-4/EWA(h) Po-4/Po-4/Pg-4/Peb/Pk-4/PL-4  
ACCESSION NR: AP5003053 S/0119/65/000/001/0013/0016  
44  
34  
8

AUTHOR: Sokolov, L. N.

TITLE: Semiconductor bridge converter of resistance into frequency

SOURCE: Priborostroyeniye, no. 1, 1965, 13-16

TOPIC TAGS: measuring instrument, resistance to frequency converter, transistorized instrument

ABSTRACT: A semiconductor converter of resistance into frequency, developed at IAT, is described. It can also be used for the conversion of capacitance or inductance into frequency. The conversion system constitutes a closed static system with automatic balancing of a measuring bridge by the alternating current frequency, which serves as both the balancing and output parameter. The schematic diagram and the components are described in detail. The operating frequency range is 600—900 cps, the nonlinearity of the conversion function is 2.9%, the average sensitivity is 9 cps/ohm, the output voltage is 5.0 v for a 1.0-kohm load, the temperature range is from -30 to +70C, the power consumption is 1.8 w, and the dimensions are 130 x 70 x 50 mm. The basic accuracy of the converter

Card 1/2

L 26332-65

ACCESSION NR: AP5003053

is  $\pm 0.3\%$ , and the additional temperature error does not exceed  $0.15\%/10^\circ C$ . The basic accuracy is maintained when the supply voltage varies within  $\pm 10\%$ . The conversion sensitivity threshold does not exceed  $0.1\%$ , corresponding to a frequency error of 0.2 cps. The conversion time is on the order of 0.05 sec. Orig. art. has: 3 figures and 7 formulas.

[03]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: EC

NO REF SOV: 003

OTHER: 000

ATD PRESS: 3187

Card 2/2

L 50274-65 EWT(l)/EPA(s)-2/EWT(m)/EWP(i)/T/EWP(t)/EEC(b)-2/EWF(b) Pt-7/Pi-4

IJP(c) JD/GG

ACCESSION NR: AP5011450

UR/0048/65/029/004/0647/0649

AUTHOR: Kotel'nikov, N. V.; Sokolov, L. N.; Fadeyev, V. I.

TITLE: Determination of optimum current density in electrolytic preparation of films /Report, Second All-Union Symposium on the Physics of Thin Ferromagnetic Films held in Irkutsk 10-15 July 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 4, 1965, 647-649

TOPIC TAGS: thin film, ferromagnetic thin film, electroplating

ABSTRACT: The magnetic and other properties of films prepared by electroplating depend to some degree on the current density, but determination of the best current density experimentally is a difficult problem. Hence in the present paper a procedure to facilitate determination of the optimum current density is proposed. The calculations may also be of help in preparing thin films on conducting substrates. Usually, in current density calculation, in view of the high resistance of the electrolyte as compared with the electrodes, it is assumed that the electrode potential is constant. However, one can realize conditions where the potential will vary appreciably, and with it the current density. By carrying out a test

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L 50974-65

ACCESSION NR: AP5011450

plating under these conditions and then examining the plated film over the length of the cathode one can find the optimum quality section and, accordingly, determine the optimum current density (potential) for the given temperature, bath, etc. The pertinent analytical calculations are adduced and the design of the experiment is described. Some variants are suggested. Orig. art. has: 8 formulas and 2 figures.

Association: None

SUBMITTED: 00 / 1935

ENCL: 00

SUB CODE: EE, EC

NR REF Sov: 002

OTHER: 000

SR  
Card 2/2

L 15178-66 EWT(m)/EWP(w)/T/EWP(t)/EWP(z)/EWP(b) LTP(c) JN/HW  
ACC NR: AP6002664

SOURCE CODE: UR/0126/65/020/006/0837/0844

AUTHOR: Kotel'nikov, N. V.; Bobrov, Yu. V.; Yegorov, G. V.; Sokolov, L. N.

ORG: none

TITLE: Investigation of the magnetic properties of chemically deposited nickel films

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 6, 1965, 837-844

TOPIC TAGS: metal film, nickel, ferromagnetic material, magnetic property, hysteresis loop, phosphorus

ABSTRACT: This is a continuation of previous investigations (Kotel'nikov et al. Izv. AN SSSR, ser. fiz., 1961, 25, 5, 655; DAN SSSR, 1962, 143, 4, 908; Izv. SO AN SSSR, 1962, no. 6, 105; Izv. SO AN SSSR, ser. tekhn. nauk, 1963, 10, 3, 142) with the difference that it deals with the ferromagnetic properties of chemically deposited Ni films with a structure gradually varying from specimen to specimen (crystalline in first specimens and amorphous in the last specimens). The formation of ferromagnetic properties of the films was investigated as a function of oscillographically plotted hysteresis loops and differential curves in 1 and 10 kilo-cps fields. Bath composition (g/liter):  $\text{NiSO}_4$ , 30;  $\text{NaMH}_2\text{PO}_2$ , 10;  $\text{NaC}_2\text{H}_3\text{O}_2$ , 10. On this basis certain properties of the chemically produced films are tentatively explained since the mechanisms of formation and the structure of these films so far remain unknown. As the bath solution becomes

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UDC: 539.216.22:621.318.1:538

66  
61  
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L 15178-66  
ACC NR: AP6002664

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spent, the ferromagnetic properties of the films diminish. The structure of the specimens gradually changes from crystalline to amorphous the higher the number of the specimen is (the number of specimens immersed in the bath, one after another, is 20, and each is present in the bath for 20 min; thus each bath solution was used for a total of 400 min). Chemical deposition proceeds in two stages: formation of crystal nuclei and growth of crystals. It may be assumed that in the initial specimens, at the moment of formation of deposit on the substrate, the density of crystal nuclei is much lower than in the subsequent specimens and hence the initial specimens acquire a sufficiently well-expressed crystalline structure and the corresponding high ferromagnetic properties. The gradual decrease in the magnetization of the films from specimen to specimen appears to be partly due to the occupation of the d-subshell of Ni by valent electrons of P (the amount of P in the deposit is the greater the higher the number of the specimen). Moreover, the P impurity is bound to enlarge the critical dimensions of the crystallites (crystal nuclei) and reduce the ferromagnetic Curie point. "The authors are indebted to B. N. Barskiy for handling the X-ray structural analysis of the specimens, as well as to M. N. Kalugin and A. M. Lyatokh for determining the P content of the films." Orig. art. has: 5 figures.

SUB CODE: 11, 20/ SUBM DATE: 18Jun65/ ORIG REF: 006/ OTH REF: 001

Card 2/2 SC

PLOTNIKOV, N.N.; SOKOLOV, L.N.

Pharmacological characteristic of hexachloroethane. Farm. i toks.  
10 no.2:47-51 Mr-Ap '47. (MLRA 7:2)

1. Iz otdela meditsinskoy parazitologii (zaveduyushchiy - akademik  
Ye.N.Pavlovskiy) i otdela farmakologii (zaveduyushchiy V.M.Chernov)  
Vsesoyuznogo instituta eksperimental'noy meditsiny im.A.M.Gor'kogo.  
(Hexachloroethane)

CH SUKOLOV, L.N.

27

Boiling kettle for textiles. Ya. S. Zalmanzon and L. N. Sokolov. Izhevsk. Nauch.-Issledovatel. Inst. Kirovchalo-  
bureza. Prom. Nauch.-Issledovatel. Trudy 18, 123-34  
(1951).—The economical features of the kettle, which was  
described earlier (Z., ibid. 17, (1950)), are discussed in terms  
of practical plant use. The high order of versatility and  
economy is stressed. Operating data are given.  
G. M. Kosolapoff

GUSEV, M.I., inzh. (g.Stalin); SOKOLOV, L.N., inzh. (g.Stalin)

First results of the consolidation of the operations of industrial approach tracks and adjacent stations. Zhel.dor.transp. 43  
no.3:73-75 Mr '61. (MIRA 14:3)

1. Nachal'nik tekhnicheskogo otdela Upravleniya Donetskoy dorogi  
(for Gusev). 2. Instruktor otdela transporta i svyazi Stalinskogo  
obkoma Kommunisticheskoy partii Ukrayny (for Sokolov).  
(Railroads--Management) (Railroads, Industrial)

GUSEV, M.I., inzh.; SOKOLOV, L.N., inzh.

Advantages of the mass transfer of industrial approach trucks  
to main lines. Zhel.dor.transp. 44 no.5:22-26 My '62.  
(MIRA 15:5)

1. Nachal'nik tekhnicheskogo otdela Donetskoy dorogi (for  
Gusev). 2. Instruktor otdela transporta i svyazi Donetskogo  
oblastnogo komiteta Kommunisticheskoy partii Ukrayiny.  
(Railroads--Consolidation)

SOKOLOV, L.N., mladshiy nauchnyy sotrudnik

Problems in early free skin grafting in the treatment of third degree burns. Ortop., travm.i protez. 20 no.11:19-23 N '59.

(MIRA 13:4)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta travmatologii i ortopedii (direktor - dotsent M.G. Grigor'yev).  
(SKIN TRANSPLANTATION)  
(BURNS surg.)

SOKOLOV, L. N., mlad. nauchn. sotrud.

Early free skin plastic surgery in extensive grade III burns. Ortop.,  
travm. i protez. 22 no. 8:78-79 Ag '61. (MIRA 14:12)

1. Iz Gor'kovskogo nauchno-issledovatel'skogo instituta travmatologii  
i ortopedii (dir. - dotsent M. G. Grigor'yev)

(BURNS AND SCALDS—SURGERY)  
(SKIN GRAFTING)

KOLOKOL'TSEV, M.V., dotsent; SOKOLOV, L.N.

Treatment of third degree burns in early free dermatoplasty  
using the dermatome. Ortop., travm.i protez. 23 no.11:13-16  
(MIRA 16:4)  
N '62.

1. Iz Gor'kovskogo instituta travmatologii i ortopedii (dir.-  
dotsent M.G.Grigor'yev) i Gor'kovskogo meditsinskogo instituta  
imeni S.M.Kirova (rektor - dotsent I.F.Matyushin). Adres avtorov:  
Gor'kiy, naberezhnaya Zhdanova, d.11, Institut travmatologii i  
ortopedii.

(BURNS AND SCALDS) (SKIN GRAFTING)

S. A. KUZNETSOV, L. N.

"Investigation of the Plasticity and Temperature Cycles in Forging Titanium." Dr Tech  
Sci, Inst of Machine Studies, Acad Sci USSR, Moscow, 1953. Dissertation (Referativnyy  
Zhurnal--Mashinostroenie, Moscow, Vol 54)

No: 00000000000000000000000000000000

SOKOLOV, L.N.

U S S R :

✓Investigation of plasticity of technical grades of titanium.  
L. N. Sokolov, V. P. El'yutin, and V. I. Zaleskii. Izvest. Akad. Nauk S.S.R., Odz. Tekh. Nauk 1954, No. 3, 110-15.—The temp. relation between plasticity, resilience, and tensile strength of a tech-grade Ti sample was detd. experimentally. Below 700° the plasticity is fairly large at slow deformation rates. At temps. above 700° 0.46-0.88% C has no effect upon the Ti plasticity. The recrystn. of Ti during plastic deformation begins at 700°.

W. M. Sternberg

gyp

SOKOLOV, L.N., kandidat tekhnicheskikh nauk; ZALESSKIY, V.I., professor;  
TULYUTIN, V.P., professor, doktor.

Resistance to deformation of industrial titanium. Sbor.Inst.stali  
no.33:142-153 '55. (MIRA 9:6)

1.Kafedra kovki i shtampovki i Kafedra metallurgii redkikh metallov.  
(Titanium--Testing)

*Sokolov, L.N.*

*1 AE2C*

18      11      18

*Grain Growth of Commercial Titanium on Heating. I. N. Sokolov [Metalovedenie i Obrabotka Metallov, 1956, (10), 34-36].*  
 [In Russian]. S. El'yutin, and Zalessky showed (*Izvest. Akad. Nauk S.S.R.*, 1954, [*Tekhn.*], (3), 110; *M.A.*, 23, 100) that recrystallization of deformed Ti is complete at temp. >700° C. S. studied the grain growth of commercial Ti (0.5% C.) at 800°-1100° C. A 5-kg. ingot prepared by induction-melting powder in a graphite crucible was forged into a rod 12 mm. in dia., from which cylindrical specimens, 10 × 13 mm., were prepared. The specimens were first annealed for 1 hr. at 600° C. (without protective atmosphere) to relieve internal stresses and produce a homogeneous structure,

then heated at test temp., furnace-cooled, sectioned, and etched in HF-HNO<sub>3</sub>. The results of grain-size measurements (mean of values at 200× and 600× magnifications) were:

Time, hr.	Temperature, °C.			
	800°	900°	1000°	1100°
	Grain-Size, $\mu^2$			
0.5	360	400	645	850
1	720	785	960	1800
2	940	950	1450	1950
5	910	1025	1640	2075

*Zhdanov Metallurgical Inst.*

Sokolov, L. N.

Evidently appreciable grain-growth begins at 900° C., and mostly takes place in the first 2 hr. Even at 1100° C. the grain-size remains comparatively fine and this is probably connected with the presence of a carbide phase.—G. V. E. T.

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AUTHORS: Sokolov, L. N., Kiritsev, A. D. SOV/163-58-2-34/46

TITLE: The Influence of the Rod Weight on the Properties of the Surface of Big Forgings (Vliyaniye vesa slitka na kachestvo poverkhnosti krupnykh pokovok)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 2, pp. 192 - 195 (USSR)

ABSTRACT: The influence of the rod weight on the properties of the surface of forgings and the reason for the formation of various defects in big forgings were investigated. With an increase of the rod weight the amount of surface defects increases, too. The following steel types were used as samples: 22K, 55Kh, 50KhN, 60 KhN and 5KhNV. The surface defects of big forgings of steel 22K may be grouped as follows:  
1) Cross cracks and breaks.  
2) Front face cracks at the lower part.  
3) Front face cracks at the side of the peg.  
4) Annular cracks at the side of the peg.  
5) Longitudinal cracks.  
6) Annular cracks in the middle part.

Card 1/2

The Influence of the Rod Weight on the Properties  
of the Surface of Big forgings

SOV/163-58-2-34/46

Part of these defects are removed when the sample is further treated. Annular cracks do mostly not affect the properties of the forgings. The defective samples were subjected to a metallographical analysis, where in the range of the annular defects non-metallic influences, especially by aluminum oxide, were found. The authors assume that just these non-metallic influences represent the reason for the formation of cracks. Based on the investigations carried out it may be concluded that with an increase of the rod weight the quality of the surface of forgings deteriorates, and thereby also the properties of the metal. There are 4 figures, 1 table, and 3 references, 3 of which are Soviet.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute)

SUBMITTED: October 21, 1957  
Card 2/2

SOKOLOV, L.N.

Surface defects on large forgings. Kuz.-shtam. proizv. l no.8:4-5  
Ag '59. (MIRA 12:12)  
(Steel forgings)

IVANUSHKIN, P.F.; SOKOLOV, L.N.; ANDRYUSHCHENKO, P.P.; KIRITSEV, A.D.;  
KOSTYUCHENKO, N.T.

Ratio of the cross-sectional area of forged metal to that of the  
original blank following alternate deformation in different directions.  
Kuz.-shtam. proizv. 1 no.9:9-10 S '59. (MIRA 12:12)  
(Forging)

"APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652010017-8

APPROVED FOR RELEASE: 08/25/2000

CIA-RDP86-00513R001652010017-8"

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A005/A001

11400

Translation from: Referativnyy zhurnal, Mashinostroyeniye, 1961, No. 2, p. 5,  
# 2V37

AUTHOR: Sokolov, L. N.

TITLE: The Forging of Commercial Titanium

PERIODICAL: "Sb. nauchn. tr. Zhdanovsk. metallurg. in-t", 1960, No. 5, pp. 275-288

TEXT: The method and the results are described of an experimental investigation for substantiating the practical forging conditions of commercial titanium with 60 - 0.88% C (?). The ductility and the dependence of the grain growth on the temperature and the deformation degree were determined. The titanium deformability diagram is plotted showing that it is highly deformable at temperatures above 700°C. The resistance of titanium to deformation decreases with increasing temperature, and therefore, from the standpoint of energy consumption, the processing should be conducted at temperatures higher than 700°C. Heating up to 1,100°C does not cause an intense growth of the grain, even in the range of critical deformation degrees; heating at temperatures higher than 1,100°C causes an intense absorption of nitrogen and oxygen by the metal, whereat their solid solution is

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The Forging of Commercial Titanium

S/123/61/000/002/007/017  
A005/A001

formed initially, then the solid and brittle phases are separating at the surface, which sharply decreases the ductility of the upper metal layers. Consequently, the heating above 1,100°C should be conducted in a protective atmosphere. The temperature range of 750 - 1,100°C is recommended for forging the commercial titanium. There are 9 figures and 4 tables.

S. Kolesnikov

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

L 19189-63EWP(k)/EWP(q)/EWT(m)/BDS - AFFTC/ASD - Pf-1 JD/HW  
ACCESSION NR: AR3004202 S/0276/63/000/005/V008/V008

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 5V42

67

AUTHOR: Sokolov, L. N.; Kirilov, A. D.; Andryushchenko, P. P.; Kostyuchenko, N. T.TITLE: Effect of forging reduction ratio on mechanical properties of forgings,  
from a 20t ingot of steel 45

CITED SOURCE: Sb. Nauchn. tr. Zhdanovsk. metallurg. in-t, vyip 8, 1962, 140-145

TOPIC TAGS: forging method, anisotropy forging, forging reduction ratio, steel 45

TRANSLATION: The total forging reduction ratio is determined as the product of particular forging reduction ratio during draw-out without taking into account the forging reduction ratio at upsetting. Investigations were carried out on forgings of 20t ingots from steel 45 at 40% upsetting and elongation with ukovs of 1.5 to 7. Anisotropy of mechanical properties, that was greater in grain direction, was observed in forged metal;  $\sigma_b$  and  $\sigma_s$  depend little on forging reduction ratio and on the direction of grain in the forging;  $\psi_i$ ,  $\Delta\psi$  and  $\epsilon_k$  change more markedly when forging reduction ratio increases. Forging reduction ratio of 2.5 to 3.0 should be considered optimum in forging without

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L 19189-63

ACCESSION NR: AR3004202

upsetting, in order to obtain isotropic properties; in the case when there is  
upsetting optimum forging reduction ratio is 3 to 4. Four figures, 6 references.  
I. Gendina.

DATE ACQ: 21Jun63

SUB CODE: IS

ENCL: 00

Card 2/2

L 6671-65 EWT(m)/EWP(k)/EWP(q)/EWP(b) Pf-4 JD/HW

ACCESSION NR: AR4036011

8/0278/64/000/003/V017/V017

49

SOURCE: Ref. zh. Tekhnol. mashinostr. Sv. t., Abs. 3V118

AUTHOR: Sokolov, L. N.; Kiritsev, A. D.

TITLE: Computation of the force required for stamping bottom plates with large overall dimensions

CITED SOURCE: Sb. nauchn. tr. Zhdanovsk. metallurg. in-t, vy\* p. 11, 1963, 135-137

TOPIC TAGS: plate pressing, pressing force, Dean force formula, Tomlenov force formula, carbon steel working, stainless steel working, aluminum working

TRANSLATION: To compute the force of pressing bottom plates, the formulas of Dean and Tomlenov are available. In order to determine the suitability of the formulas, experiments were conducted at the Zhdanov Heavy Machine Building Plant. The pressing of a large-size bottom plate of carbon and stainless steels and aluminum was done on a 2,500-ton capacity hydraulic press. It was determined that the Dean formula was more suitable for calculating the force of pressing bottom plates; a good match-up of the force measured by the Tomlenov formula with the experimentally-calculated force was observed only in the cold pressing of stainless steel.

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Card 2/2

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KRUGLOVA, Ye.M., red.izd-va; TIKHONOVA, Ye.A., tekhn.red.

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